

ABSTRACT OF THE INVENTION

A dispersion compensating optical fiber that includes a segmented core having a central core segment, a moat segment, and a ring segment wherein the ring segment is preferably offset from the moat outer radius, r_2 , by a ring offset, X_o , greater than $0.4\ \mu\text{m}$. The refractive index profile is selected to provide a total dispersion at 1550 nm of between about -120 and -145 ps/nm/km, and a total dispersion slope at 1550 nm of between about -0.36 and -0.56 ps/nm²/km. The refractive index profile is preferably further selected to provide a kappa, defined as the total dispersion at 1550 nm divided by the dispersion slope at 1550 nm, of between about 250 and 320 nm. Optical transmission systems including the present invention dispersion compensating optical fiber which have residual dispersion less than +/- 15 ps/nm per 100 km of standard single mode transmission fiber are also disclosed.